

SUNSTAR NURSERIES LTD INFO SHEET:

FIREBLIGHT (*ERWINIA AMYLOVORA*)



What is FIREBLIGHT?

Fire blight is a serious disease causing considerable damage and economic losses in apple and pear. The disease is caused by a bacterium, *Erwinia amylovora*, which infects hosts in the Rosaceae family. Host plants found in our zone include; apple, pear, crab apple, hawthorn, cotoneaster and mountain ash.

Infection and disease development depends on three events that must happen simultaneously:

1. the presence of bacteria
2. a susceptible host
3. favourable weather conditions

The bacteria grow over a range of temperatures from 4-32°C, with rapid multiplication leading to infection occurring most frequently when temperatures are between 24-28°C. Hot, wet weather for an extended period of time favours the multiplication of the pathogen and infection, and encourages the succulent growth of susceptible plant tissue.

Open blossoms are the most susceptible tissues since they provide an opening for bacterial entry. Bacteria are carried to blossoms by wind, rain and insects. Further spreading of the pathogen occurs when pollinating insects carry it from infected to non-infected blossoms. Young trees are more likely to be severely damaged or killed than older trees.

Signs & symptoms of FIREBLIGHT:

- Fire blight symptoms may appear on the blossoms, shoots, branches, trunk and rootstock.
- Infected blossoms wilt and turn brown, while infected branch tips and leaves usually wilt and turn black, as if scorched by fire. On mature woody tissue, symptoms may include sunken, discoloured areas, cracks or bark splitting or peeling.
- Blighted pear shoots are black in colour, while infected apple shoots are usually a lighter shade of brown.
- Infected branch tips will bend into a “J” or “shepherd’s crook” this is probably the most tell-tale sign of Fireblight.
- During warm and humid or rainy weather drops of milky/amber coloured bacterial ooze frequently appear on the blighted shoots. Blighted leaves may remain attached to the tree throughout the winter.
- Cankers appear as slightly darker, water soaked areas in the wood, which may produce amber coloured bacterial ooze that runs down the bark. Reddish brown streaks may be seen in the cambium (under the bark) of diseased branches. Later in the season the bark often cracks around the margins of the canker.
- Rootstock blight may not exhibit typical fire blight symptoms. It is sometimes mistaken for crown rot due to brown discoloured tissue under the bark at the base of the tree. Trees may weaken and die beginning one to several months after planting. Oozing bark may be observed near the base of the tree.

Control of FIREBLIGHT:

- Remove current infections as soon as they are noticed. Prune out infected branches at least 30-40 cm below the visibly diseased part. This is necessary as bacteria are usually present beyond the discoloured area. Dip tools in a disinfectant between each cut. Avoid pruning during wet weather or when storms are expected within the next 24 hours.

- Flag trees that have been pruned, and watch for further symptoms or the development of cankers. Prunings should be removed and burned immediately.

Avoid over fertilizing with nitrogen. Excess nitrogen stimulates succulent growth that is susceptible to infection.

- Do not cut rootsuckers during a blight outbreak, because the wounds may become infected. They may be safely removed during the dormant season.

- In healthy trees, avoid excessive winter pruning which stimulates vegetative growth the following growing season. Regular annual pruning and minimizing the number of cuts made keeps the tree “calmer”. Delay summer pruning until terminal bud set has occurred or, until late winter (Late Dormancy).

- Prune infected trees during the dormant season to remove all overwintering cankers and sources of inoculum. Prune well beyond visibly infected areas.

- Closely monitor sources of fire blight such as susceptible ornamental plants or abandoned apple trees, hawthorn, mountain ash and cotoneaster for signs of fire blight and cankers. Overwintering cankers are one of the primary sources of bacteria for subsequent infections. If possible, remove these host tree and shrubs from the vicinity. Scout twice a week starting at bloom for blossom infections. Prompt removal of early bloom infections significantly reduces the impact of the disease later on in the season.

- Serenade Max, Bloomtime and BlightBan are biological products registered for the suppression of fire blight.

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Referances:

<http://www.omafra.gov.on.ca/english/crops/facts/fireblight.htm>

<https://www.agr.gc.ca/eng/agriculture-and-the-environment/agricultural-practices/agroforestry/diseases-and-pests/fireblight/?id=1367251354448>

<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/tree-fruits/fire-blight>

<http://treefruit.wsu.edu/crop-protection/disease-management/fire-blight/>

<https://www.arborcare.com/blog/fireblight>

